FIG. 1

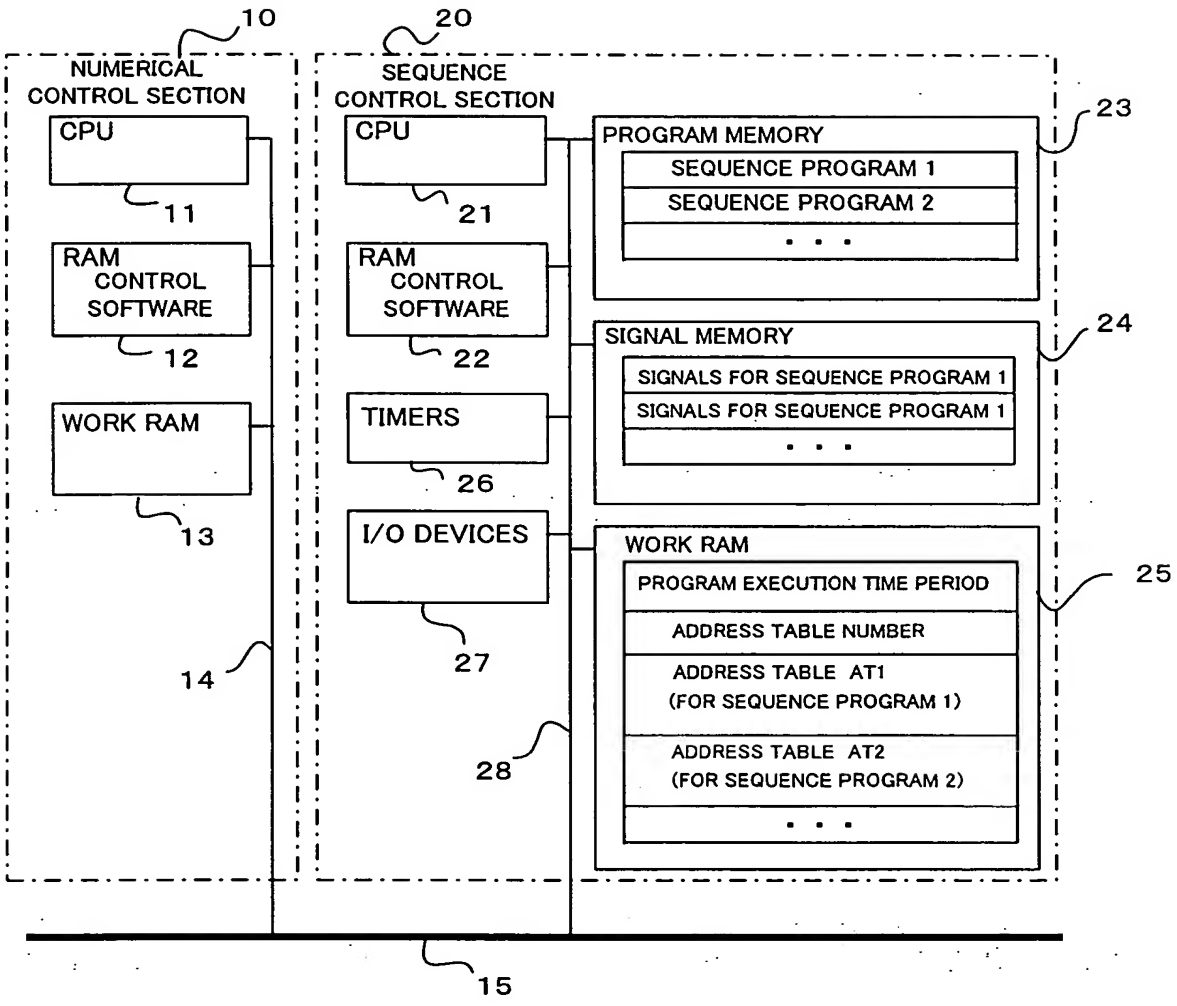
10
NUMERICAL CONTROL SECTION
CPU
11
RAM CONTROL SOFTWARE
12
WORK RAM
13
14
20
SEQUENCE CONTROL SECTION
CPU
21
RAM CONTROL SOFTWARE
22
TIMERS
26
I/O DEVICES
27
28
PROGRAM MEMORY
SEQUENCE PROGRAM 1
SEQUENCE PROGRAM 2
23
SIGNAL MEMORY
SIGNALS FOR SEQUENCE PROGRAM 1
SIGNALS FOR SEQUENCE PROGRAM 1
24
WORK RAM
PROGRAM EXECUTION TIME PERIOD
ADDRESS TABLE NUMBER
ADDRESS TABLE AT1 (FOR SEQUENCE PROGRAM 1)
ADDRESS TABLE AT2 (FOR SEQUENCE PROGRAM 2)
25
15

FIG.2a

SIGNALS FOR SEQUENCE PROGRAM 1

GROUP NUMBER	
0	X0000-X0127 (INPUT SIGNALS FROM I/O DEVICE)
1	X0200-X0327 (INPUT SIGNALS FROM I/O DEVICE)
2	Y0000-Y0127 (OUTPUT SIGNALS TO I/O DEVICE)
3	Y0200-Y0327 (OUTPUT SIGNALS TO I/O DEVICE)
4	F0000-F0767 (INPUT SIGNALS FROM NC SECTION)
5	F1000-F1767 (INPUT SIGNALS FROM NC SECTION)
6	G0000-G0767 (OUTPUT SIGNALS TO NC SECTION)
7	G1000-G1767 (OUTPUT SIGNALS TO NC SECTION)
8	• • •

FIG.2b

SIGNALS FOR SEQUENCE PROGRAM 2

GROUP NUMBER	
0	X0000-X0127 (INPUT SIGNALS FROM I/O DEVICE)
1	X0200-X0327 (INPUT SIGNALS FROM I/O DEVICE)
2	Y0000-Y0127 (OUTPUT SIGNALS TO I/O DEVICE)
3	Y0200-Y0327 (OUTPUT SIGNALS TO I/O DEVICE)
4	F0000-F0767 (INPUT SIGNALS FROM NC SECTION)
5	F1000-F1767 (INPUT SIGNALS FROM NC SECTION)
6	G0000-G0767 (OUTPUT SIGNALS TO NC SECTION)
7	G1000-G1767 (OUTPUT SIGNALS TO NC SECTION)
8	• • •

FIG.3a

FOR SEQUENCE PROGRAM 1

AT1-1

GROUP NUMBER	TOP PHYSICAL ADDRESS
0	20000000h
1	20001000h
2	20002000h
3	20003000h
4	20004000h
5	20005000h
6	20006000h
7	20007000h
• • •	• • •

FIG.3b

FOR SEQUENCE PROGRAM 2

AT2-1

GROUP NUMBER	TOP PHYSICAL ADDRESS
0	20008000h
1	20009000h
2	2000a000h
3	2000b000h
4	2000c000h
5	2000d000h
6	2000e000h
7	2000f000h
• • •	• • •

FIG.4a

FOR SEQUENCE PROGRAM 1

SYMBOL INFORMATION	PHYSICAL ADDRESS
EMERGENCY_STOP	20008008h
LIMIT_SWITCH_X-	20008009h
LIMIT_SWITCH_X+	2000800ah
DOOR_OPEN	2000d000h
OIL_PRESSURE_ALARM	2000d001h
• • •	• • •

AT1-2

FIG.4b

FOR SEQUENCE PROGRAM 2

SYMBOL INFORMATION	PHYSICAL ADDRESS
EMERGENCY_STOP	30008008h
LIMIT_SWITCH_X-	30008009h
LIMIT_SWITCH_X+	3000800ah
DOOR_OPEN	3000d000h
OIL_PRESSURE_ALARM	3000d001h
• • •	• • •

AT2-2

FIG. 5

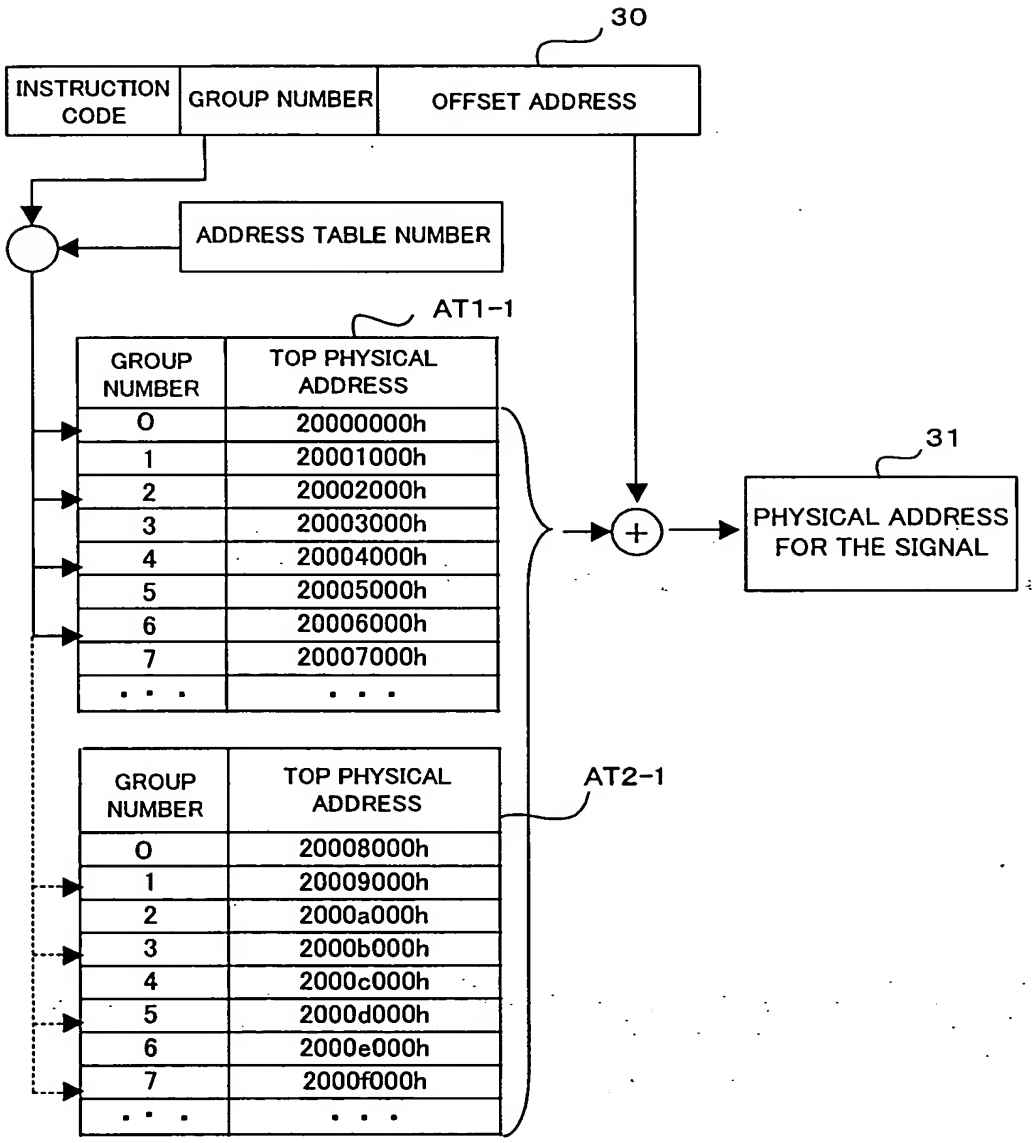
30
INSTRUCTION CODE
GROUP NUMBER
OFFSET ADDRESS
ADDRESS TABLE NUMBER
AT1-1
GROUP NUMBER
TOP PHYSICAL ADDRESS
0 20000000h
1 20001000h
2 20002000h
3 20003000h
4 20004000h
5 20005000h
6 20006000h
7 20007000h
31
PHYSICAL ADDRESS FOR THE SIGNAL
AT2-1
GROUP NUMBER
TOP PHYSICAL ADDRESS
0 20008000h
1 20009000h
2 2000a000h
3 2000b000h
4 2000c000h
5 2000d000h
6 2000e000h
7 2000f000h

FIG. 6

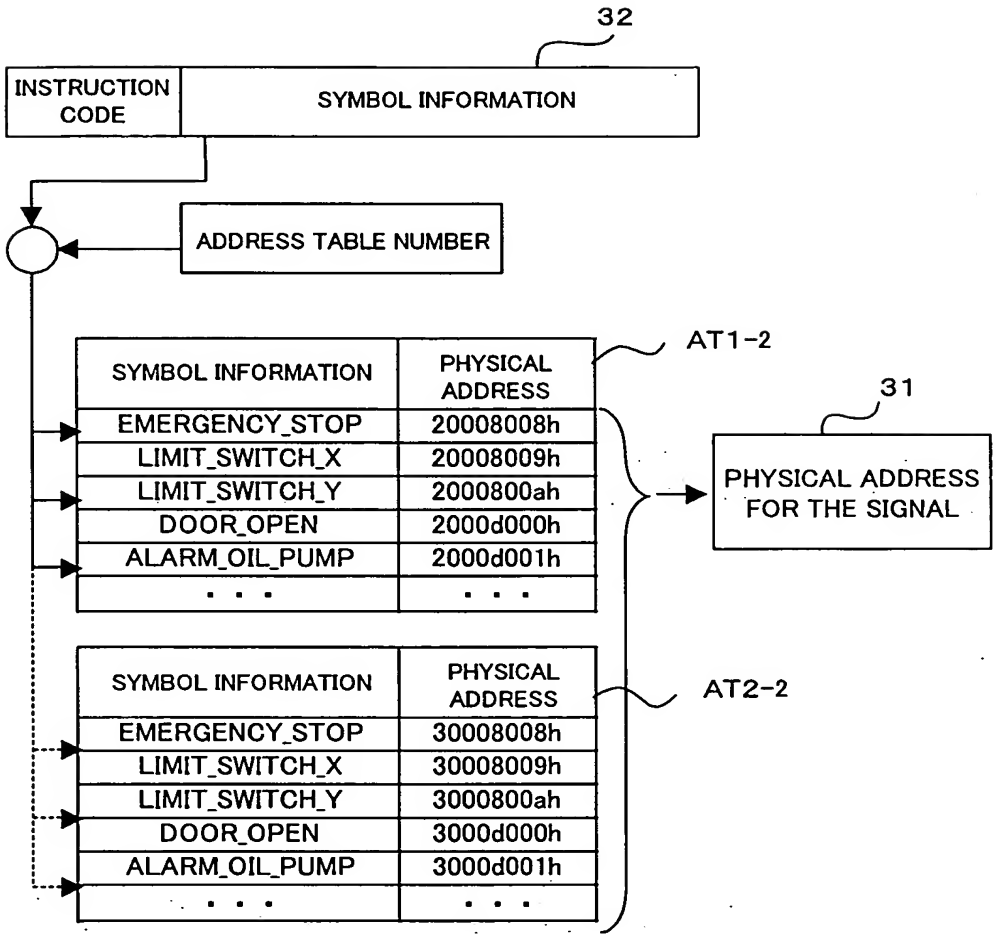
32
INSTRUCTION CODE
SYMBOL INFORMATION
ADDRESS TABLE NUMBER
AT1-2
SYMBOL INFORMATION
PHYSICAL ADDRESS
EMERGENCY_STOP
20008008h
LIMIT_SWITCH_X
20008009h
LIMIT_SWITCH_Y
2000800ah
DOOR_OPEN
2000d000h
ALARM_OIL_PUMP
2000d001h
31
PHYSICAL ADDRESS FOR THE SIGNAL
AT2-2
SYMBOL INFORMATION
PHYSICAL ADDRESS
EMERGENCY_STOP
30008008h
LIMIT_SWITCH_X
30008009h
LIMIT_SWITCH_Y
3000800ah
DOOR_OPEN
3000d000h
ALARM_OIL_PUMP
3000d001h

FIG. 7

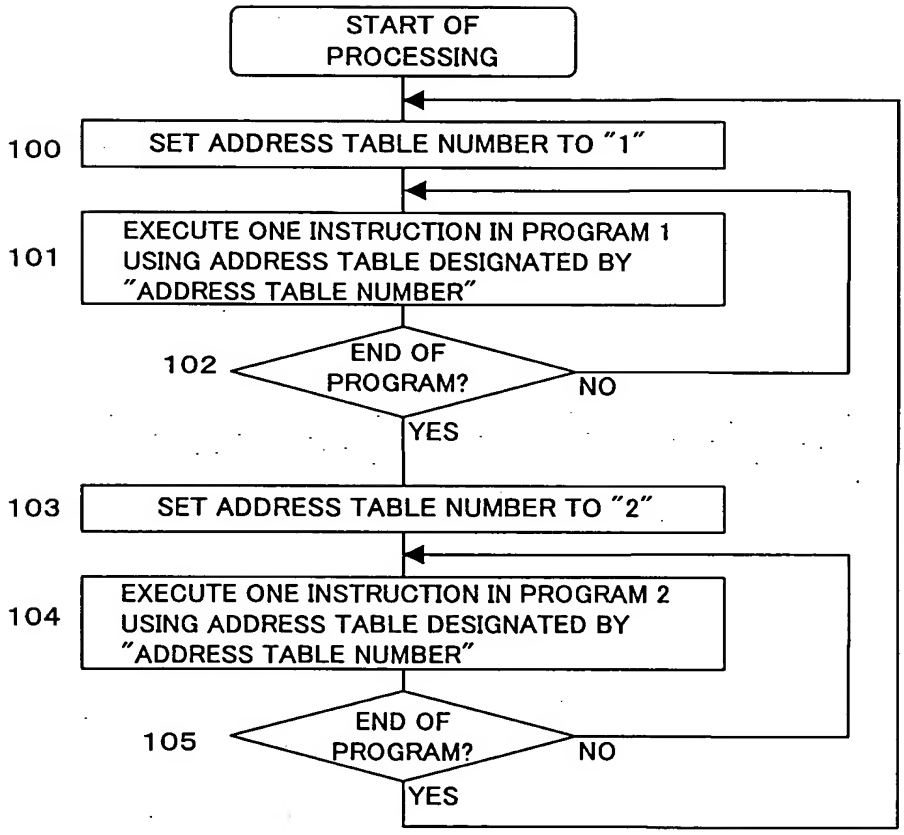
START OF PROCESSING
100
SET ADDRESS TABLE NUMBER TO "1"
101
EXECUTE ONE INSTRUCTION IN PROGRAM 1 USING ADDRESS TABLE DESIGNATED BY "ADDRESS TABLE NUMBER"
102
END OF PROGRAM?
NO
YES
103
SET ADDRESS TABLE NUMBER TO "2"
104
EXECUTE ONE INSTRUCTION IN PROGRAM 2 USING ADDRESS TABLE DESIGNATED BY "ADDRESS TABLE NUMBER"
105
END OF PROGRAM?
NO
YES

FIG. 8

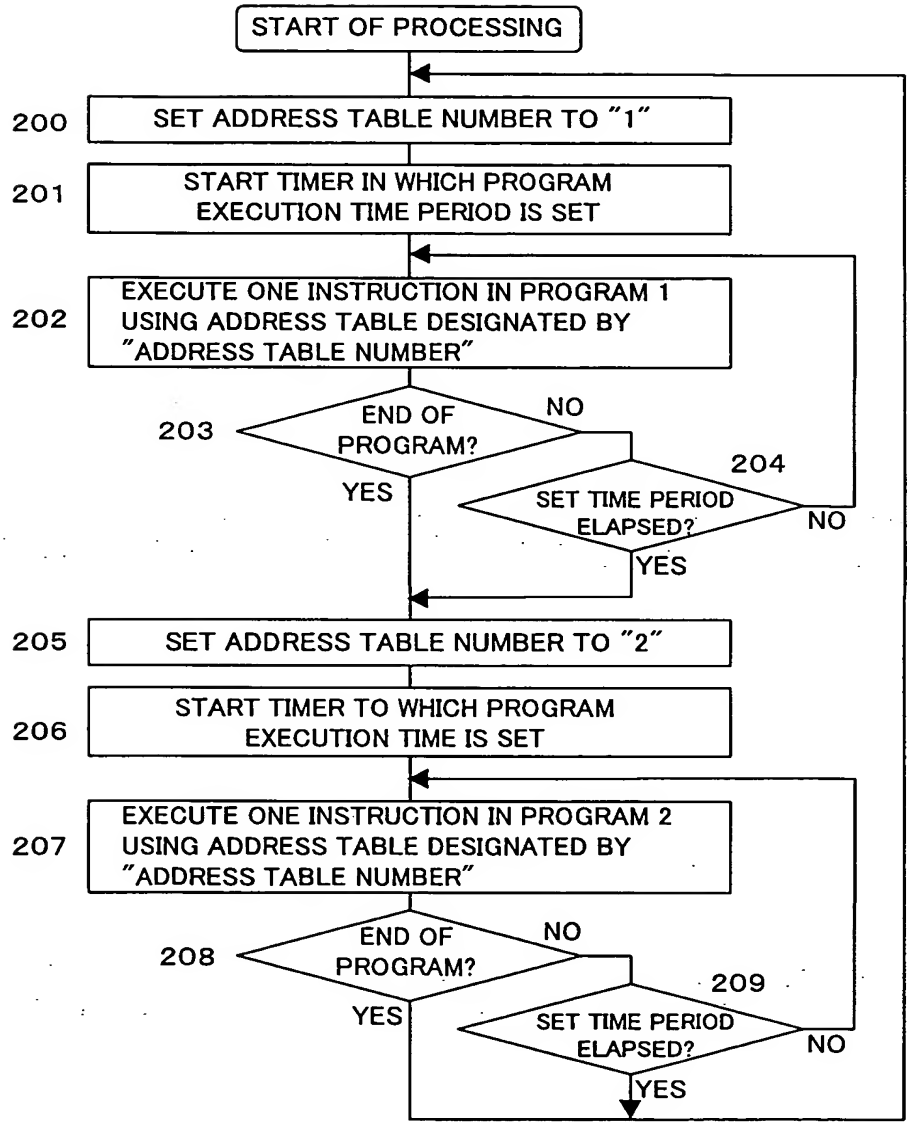
START OF PROCESSING
200
SET ADDRESS TABLE NUMBER TO "1"
201
START TIMER IN WHICH PROGRAM EXECUTION TIME PERIOD IS SET
202
EXECUTE ONE INSTRUCTION IN PROGRAM 1 USING ADDRESS TABLE DESIGNATED BY "ADDRESS TABLE NUMBER"
203
END OF PROGRAM?
NO
YES
204
SET TIME PERIOD ELAPSED?
NO
YES
205
SET ADDRESS TABLE NUMBER TO "2"
206
START TIMER TO WHICH PROGRAM EXECUTION TIME IS SET
207
EXECUTE ONE INSTRUCTION IN PROGRAM 2 USING ADDRESS TABLE DESIGNATED BY "ADDRESS TABLE NUMBER"
208
END OF PROGRAM?
NO
YES
209
SET TIME PERIOD ELAPSED?
NO
YES

FIG. 9

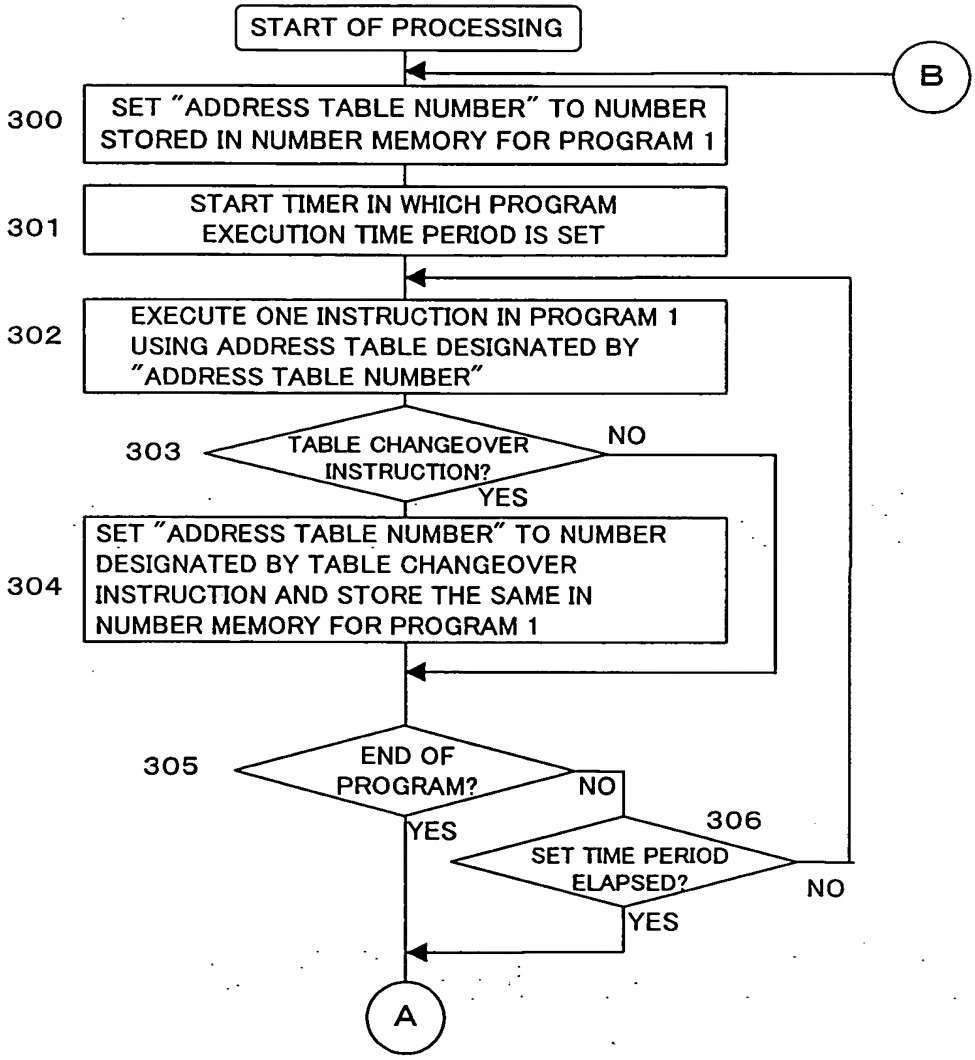
START OF PROCESSING
B
300
SET "ADDRESS TABLE NUMBER" TO NUMBER STORED IN NUMBER MEMORY FOR PROGRAM 1
301
START TIMER IN WHICH PROGRAM EXECUTION TIME PERIOD IS SET
302
EXECUTE ONE INSTRUCTION IN PROGRAM 1 USING ADDRESS TABLE DESIGNATED BY "ADDRESS TABLE NUMBER"
303
TABLE CHANGEOVER INSTRUCTION?
NO
YES
304
SET "ADDRESS TABLE NUMBER" TO NUMBER DESIGNATED BY TABLE CHANGEOVER INSTRUCTION AND STORE THE SAME IN NUMBER MEMORY FOR PROGRAM 1
305
END OF PROGRAM?
NO
YES
306
SET TIME PERIOD ELAPSED?
NO
YES
A

FIG.10

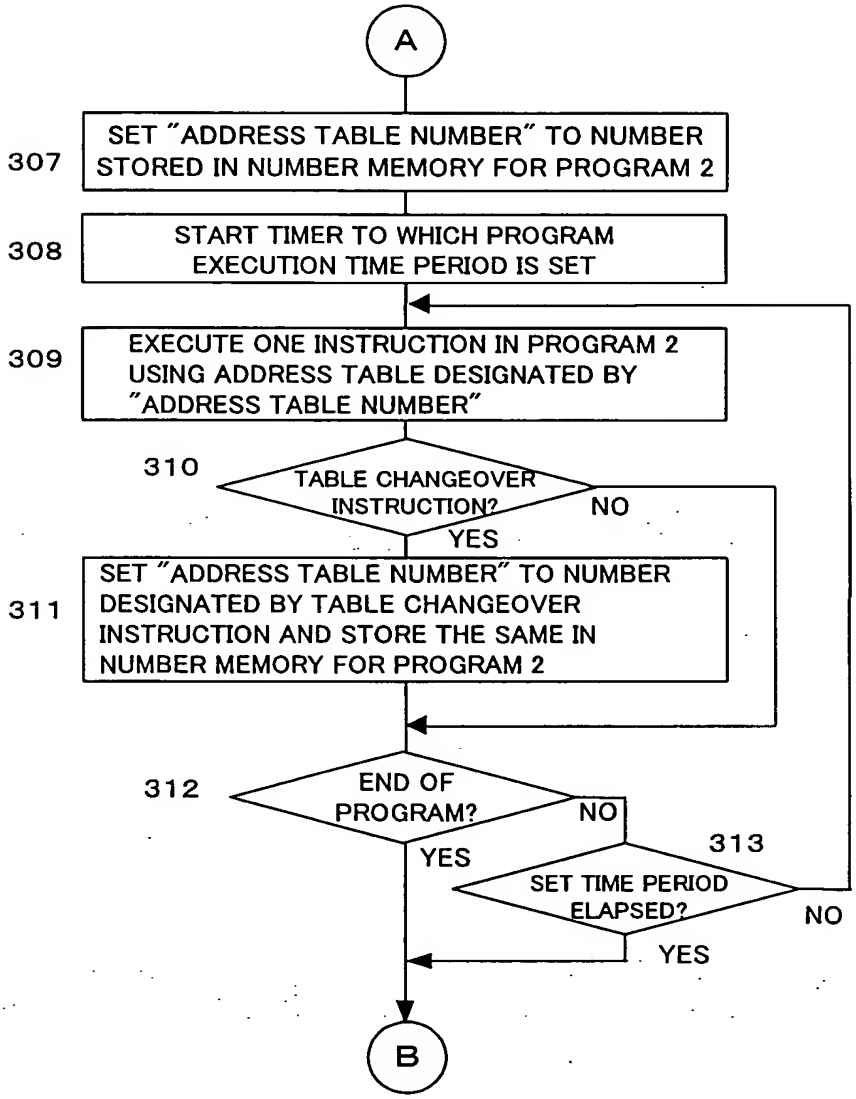
A
307
SET "ADDRESS TABLE NUMBER" TO NUMBER STORED IN NUMBER MEMORY FOR PROGRAM 2
308
START TIMER TO WHICH PROGRAM EXECUTION TIME PERIOD IS SET
309
EXECUTE ONE INSTRUCTION IN PROGRAM 2 USING ADDRESS TABLE DESIGNATED BY "ADDRESS TABLE NUMBER"
310
TABLE CHANGEOVER INSTRUCTION?
NO
YES
311
SET "ADDRESS TABLE NUMBER" TO NUMBER DESIGNATED BY TABLE CHANGEOVER INSTRUCTION AND STORE THE SAME IN NUMBER MEMORY FOR PROGRAM 2
312
END OF PROGRAM?
NO
YES
313
SET TIME PERIOD ELAPSED?
NO
YES
B

FIG.11

SIGNAL MEMORY REGION M1	
20000000H～ 2000007fH	X0～127
20001000H～ 2000107fH	Y0～127
20002000H～ 200020ffH	X200～455
SIGNAL MEMORY REGION M2	
30000000H～ 3000007fH	X0～127
40001000H～ 4000107fH	Y0～127
50001000H～ 500010ffH	X200～455